SIP REQUIREMENTS

UPDATE FOR SIP STEERING COMMITTEE

JUNE 1, 2007

8-Hour Ozone Related SIPs

- RACT SIP (due September 15, 2006)
- Transport SIP (deadline for EPA approval - May 25, 2007)
- 8-hour Attainment Demonstration SIP (due June 15, 2007)
- Reasonable Further Progress SIP (due with ozone attainment SIP)
- CAIR SIP (due March 31, 2007)

8-Hour Ozone RACT SIP

RACT =

Reasonably Available Control Technology

- Required on existing stationary emission sources in non-attainment areas
- Defined as the lowest emission level a facility is capable of meeting through the application of control technology, considering both technical and economic feasibility

8-Hour Ozone RACT SIP

- States that adopted RACT under 1-hour ozone standard must review whether what was considered RACT then is still RACT –are there new technologies, less costly controls, etc.?
- Decide to adopt new state RACT limits or that nothing more is needed to satisfy RACT
- Submit determination to EPA as a RACT SIP

8-Hour Ozone RACT SIP

MassDEP reviewed RACT for two purposes:

- To meet EPA's 8-hour ozone RACT SIP requirement. Required irrespective of whether needed to attain ozone standard
- As participant in OTC review of RACT categories to assess tighter RACT within OTC as regional attainment measure.

1-Hour RACT

- EPA issued Control Technique Guidelines (CTGs) for 29 source categories of VOC emissions - established a presumptive level of control for RACT
- RACT also required for all major sources of VOCs, whether or not within a CTG source category
- 1990 Clean Air Act extended RACT to major NOx facilities

MA 1-Hour RACT Compliance

- Adopted VOC regulations for CTG categories (1970s/1980s)
- Determined RACT on a facility-by-facility basis for non-CTG major sources
- Adopted 1995 NOx RACT regulations for:
  - Reciprocating Engines
  - Combustion Turbines
  - Municipal Waste Incinerators
  - Glass Furnaces
  - Boilers (>20 mmBtu/hr)

1-Hour RACT Results:
MA Stationary Point Source
VOC Emissions Trends

	Tons per summer day	Tons per year
1990	64	17,324
1993	61	19,165
1996	43	11,580
1999	28	9,831
2002	16	5,647

1-Hour RACT Results:
MA 2002 VOC Emissions by Source Sector

2002 VOCs	Tons per year (TPY)	TPY % of total VOC inventory	Tons per summer day (TPSD)	TPSD % of total VOC inventory
Stationary Point	**5,647**	**2**	**16**	**1%**
Stationary area	154,170	56	302	44%
On-Road Mobile	57,186	21	152	22%
Off-Road Mobile	56,577	21	224	32%
Total	273,580	100%	702	100%

1-Hour RACT Results:
MA Stationary Point Source
NOx Emissions Trends

	Tons per summer day	Tons per year
1990	318.1	115,752
1993	297.7	92,876
1996	171	56,883
1999	180	60,272
2002	129.6	45,590

1-Hour RACT Results:
MA 2002 NOx Emissions by Source Sector

2002 NOx	Tons per year (TPY)	TPY % of Inventory	Tons per summer day (TPSD)	TPSD % of Inventory
Stationary Point	45,590	17.1%	129.6	16.9%
Stationary area	34,371	12.9%	39.1	5.1%
On-Road Mobile	143,368	53.9%	453.1	59.1%
Off-Road Mobile	42,906	16.1%	144.5	18.9%
TOTAL	266,235	100%	766.3	100%

MassDEP 8-hour VOC RACT Review

Conclusion: 1-hour VOC RACT = 8-hour VOC RACT for all CTG categories except:

- solvent metal degreasing
- gasoline dispensing vapor control
- asphalt paving

MassDEP 8-Hour NOx RACT Review

- Region 1 EPA suggested MA tighten RACT for industrial, commercial and institutional (ICI) boilers and municipal waste combustors
- OTC recommended tighter ICI boiler NOx controls
- Expect that MA RACT SIP will conclude current NOx RACT meets 8-hour RACT requirements for NOx sources
- MassCAIR constitutes RACT for sources covered by cap-and-trade program

Transport SIP

SIPs must contain provisions adequate to prohibit emissions within a state from:

1.Contributing significantly to nonattainment in another state, or interfering with maintenance of a NAAQS by any other state; or

2. Interfering with another state's plans to prevent significant deterioration of air quality or to protect visibility

Transport SIP

- April 2005 - EPA found that all 50 states had failed to submit SIPs satisfying requirements related to interstate transport
- Transport SIP must address ozone, $PM_{2.5}$, prevention of significant deterioration (PSD) and visibility (regional haze)
- EPA issued guidance - what states should do to respond to finding of failure to submit SIPs addressing transport

Transport SIP

- EPA's CAIR rule is based on extent to which transport from states subject to CAIR contribute to ozone and $PM_{2.5}$ nonattainment
- EPA Guidance – any state subject to CAIR satisfies transport requirements with adoption of CAIR
- EPA's CAIR concludes that Massachusetts significantly contributes to ozone nonattainment in CT and RI but does not contribute to $PM_{2.5}$ nonattainment

Transport SIP

MassDEP concludes that it has addressed its contribution to ozone nonattainment in CT and RI through:

- Adoption of MassCAIR
- Other VOC control measures that will be part of attainment SIP

Transport SIP

MassDEP concludes that it does not contribute to $PM_{2.5}$ nonattainment:

- CAIR analysis shows minimal contribution from MA – well below EPA's threshold
- Nearest nonattaining $PM_{2.5}$ monitor is in NYC area

Transport SIP

Consistent with EPA Transport SIP guidance, MassDEP concludes:

- New Source Review permitting program addresses PSD element
- Regional Haze SIP (December 2007 due date) will address contribution to visibility impairment; premature to address visibility before then

Reasonable Further Progress (RFP) SIP

- Must show 15% reductions from 2002 base year emissions inventory
- RFP reductions must be achieved by 2008 (6 years after base year)
- May be 15% VOC or 15% NOx or a combination of both

RFP SIP

- 2008 projected emissions derived by applying growth factors to the 2002 base year emissions inventory
- 2008 projected emissions must be less than or equal to the target levels
- Preliminary calculations show MA to be well within RFP targets

DRAFT RFP Calculation

(Numbers likely to change in final SIP)

	VOC	NOX
STEP A: 2002 Base Year Anthropogenic Emissions	708.7	766.3
STEPS B & C: Mobile Post 1990 non-creditable reductions	18.3	53.7
STEP D: Adjusted 2002 Base Year Emissions	690.4	712.6
STEP E.5: 2008 Target Levels: Reduction 3% VOC, 12% NOx	669.7	627.1
STEP F: 2008 Projected Emissions including growth & controls	594.6	501.2